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A NEW SPECIES OF SPINY POCKET MOUSE (GENUS *LIOMYS*) FROM JALISCO, MEXICO

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In the course of a systematic revision of the spiny pocket mice of the genus *Liomys*, a series of large, brightly colored mice from several localities in southeastern Jalisco was studied. Individuals in this series appeared to be morphologically distinct from mice typical of *Liomys pictus plantinarenensis* Merriam, 1902, taken in the same traplines at several localities, and from specimens of *Liomys irroratus jaliscensis* (J. A. Allen, 1906), a taxon that also occurs in southeastern Jalisco. My studies now have progressed to the point where the large and distinctively colored mice from Jalisco can be defined as a new species which is distinct from, but closely related to, *Liomys pictus*. The new species is named and described below.

Liomys spectabilis new species

Holotype.—Adult male, skin and skull, no. 96051 Museum of Natural History, The University of Kansas (KU); from 2.2 mi NE Contla, 3850 ft, Jalisco; obtained on 20 September 1963 by Percy L. Clifton; original no. 5244.

Geographic distribution.—Known only from southeastern Jalisco (presently known limits from a point 8.5 mi S Mazamitla, 5300 ft in the north to a place 8 mi SW Tecalitlán in the south—see Fig. 1).

Description.—Size large, both externally and cranially (see measurements and Table 1); skull proportionally similar to that of *L. pictus*, but much larger (Fig. 2); six plantar tubercles; dorsal coloration reddish brown, lateral stripe bright ochraceous; under-

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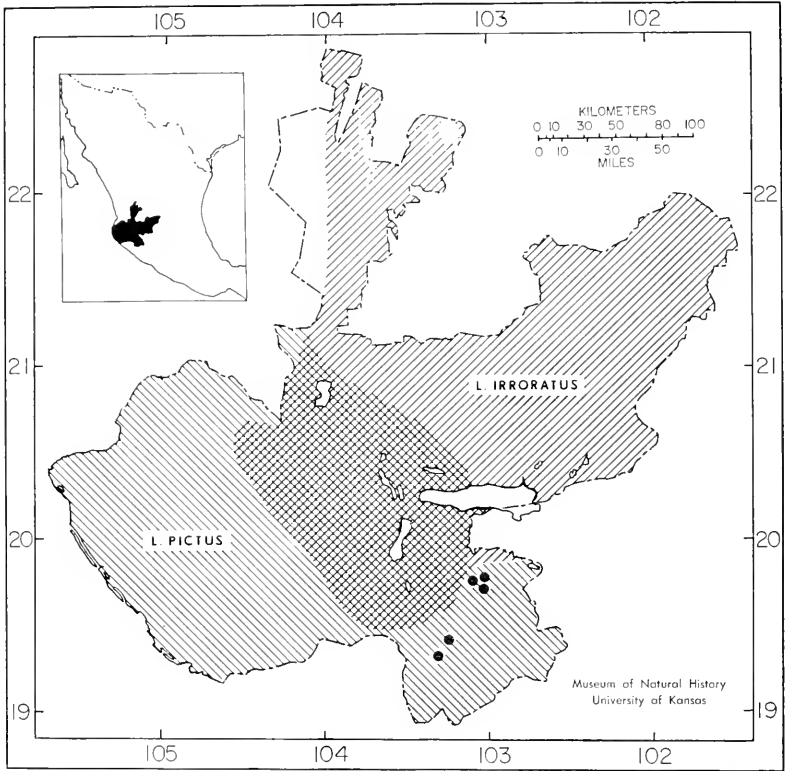


FIG. 1.—Geographic distribution of three species of *Liomys* in Jalisco, México. Closed circles indicate localities from which *Liomys spectabilis* has been taken. The inset map in the upper, left-hand corner indicates the position of the state of Jalisco in western México.

parts white; bacular morphology similar to that described for *L. pictus* (Burt, 1960:44 and pl. 11).

Measurements.—External measurements (in millimeters) of the male holotype, followed by the mean (and extremes) of four adult females for the first two measurements and eight for the second two measurements are: total length, 280, 249.5 (242-261); length of tail, 142, 129.0 (122-134); length of hind foot, 31, 30.4 (29.5-32); length of ear, 17, 16.9 (16.5-17.5). Weights of the holotype and another adult male were respectively, 69.3 and 67.1 grams; seven nonpregnant adult females averaged 51.2 (48.6-56.1) grams in weight. Cranial measurements of the specimens of *Liomys spectabilis* are given in Table 1 along with comparative measurements of *Liomys pictus plantinarenis* and *Liomys pictus pictus*.

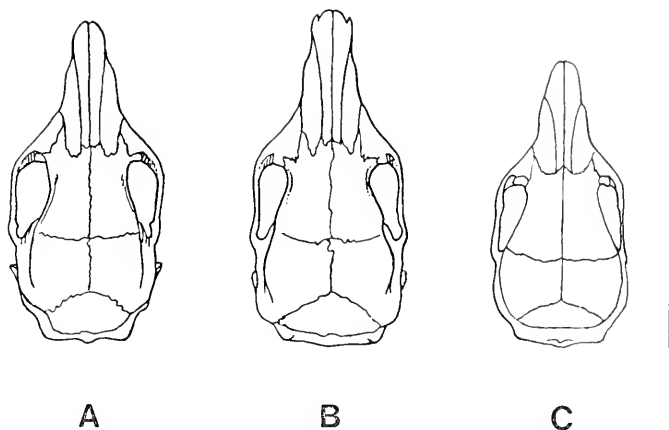


FIG. 2.—Dorsal view of the crania of three taxa of *Liomys*: A. *Liomys pictus pictus* (KU 112276, ♂, San Sebastián, Jalisco); B. *Liomys spectabilis* (KU 96051, ♂, 2.2 mi NE Contla, Jalisco); C. *Liomys pictus plantinarenسيس* (KU 96048, ♂, 2.2 mi NE Contla, Jalisco). Scale at right is 10 mm.

Comparisons.—From *Liomys pictus plantinarenسيس* with which it occurs sympatrically, *Liomys spectabilis* can be distinguished easily by its much larger size (Table 1). There is no overlap in measurements of adults of the two taxa for total length, length of hind foot, greatest length of skull, interorbital constriction, mastoid breadth, length of nasals, and length of rostrum, and *spectabilis* averages significantly larger in all other measurements analyzed (Fig. 2). Middorsal coloration of *L. spectabilis* is significantly darker than that of *L. p. plantinarenسيس* as revealed by use of a Photovolt Photoelectric Reflection Meter, Model 610. Mean reflectance values for *L. spectabilis*, followed in parentheses by those for typical *L. p. plantinarenسيس*, were: red, 11.0 (14.6); green, 6.3 (7.9); blue, 5.8 (7.1).

From *Liomys pictus pictus* of the coastal and montane areas of western Jalisco, *L. spectabilis* is again distinguished by its larger size, although the difference is not as striking as in the case of *plantinarenسيس* (Table 1, Fig. 2). Only in greatest length of skull and length of rostrum is there no overlap in the measurements of the two taxa, although *spectabilis* averages larger in all measurements except for interparietal length of females. A useful character in separating these two taxa externally is length of the hind foot, which is rarely less than 30 in *spectabilis* and rarely more than 30 in *pictus*. The only subspecies of *L. pictus* that approaches *L. spectabilis* in size is *annectens* from the mountains of Guerrero and Oaxaca. From this race, *spectabilis* can be distinguished by its slightly larger over-

TABLE 1.—Cranial measurements of three taxa of *Liomys* from Jalisco. The specimens of *L. spectabilis* and *L. p. plantinarenis* are from southeastern Jalisco and those of *L. p. pictus* are from northwestern Jalisco.

	Greatest length of skull	Zygomatic breadth	Interorbital constriction	Mastoid breadth	Length of nasals	Length of rostrum	Length of maxillary toothrow	Depth of cranium	Inter- parietal width	Inter- parietal length
<i>Liomys spectabilis</i>										
Males										
N	3	2	3	3	3	2	2	2	3	3
Mean	35.0	-----	8.2	14.6	14.5	-----	-----	-----	9.0	4.8
Minimum	34.7	15.2	8.1	13.9	14.0	15.8	5.0	8.5	8.7	4.6
Maximum	35.2	16.3	8.2	15.1	15.5	16.0	5.4	8.6	9.2	4.9
2 SE	±0.30	-----	±0.07	±0.72	±0.97	-----	-----	-----	±0.29	±0.18
Females										
N	8	6	8	8	8	8	8	7	8	8
Mean	34.1	15.6	8.0	14.5	13.6	15.5	5.2	8.4	8.5	4.4
Minimum	33.0	14.8	7.5	14.0	12.6	14.8	5.0	8.2	7.8	4.0
Maximum	35.3	16.0	8.4	15.4	14.2	16.2	5.6	8.6	9.0	4.8
2 SE	±0.59	±0.37	±0.21	±0.33	±0.40	±0.35	±0.12	±0.12	±0.28	±0.19
<i>Liomys pictus plantinarenis</i>										
Males										
N	20	19	21	20	22	22	22	19	20	21
Mean	30.4	14.0	7.3	13.5	11.7	13.0	4.8	8.1	8.3	3.8
Minimum	28.9	13.4	6.7	12.8	10.5	12.2	4.6	7.5	7.8	3.4
Maximum	32.0	14.8	7.9	13.8	12.8	13.9	5.3	8.6	8.8	4.5
2 SE	±0.42	±0.16	±0.12	±0.12	±0.25	±0.20	±0.08	±0.11	±0.12	±0.13

Females		26	23	27	27	27	24	27	23	26	27
N											
Mean	29.6	13.9	7.1	13.4	11.2	12.6	4.8	7.9	8.3	3.7	
Minimum	28.0	13.3	6.7	13.0	10.4	11.1	4.5	7.3	7.5	3.3	
Maximum	31.4	14.9	7.4	13.9	12.2	13.6	5.3	8.4	8.9	4.2	
2 SE	± 0.27	± 0.17	± 0.07	± 0.09	± 0.19	± 0.24	± 0.07	± 0.11	± 0.13	± 0.09	
<i>Liomys pictus pictus</i>											
Males		20	16	22	20	17	22	17	20	20	20
N											
Mean	32.1	15.0	7.7	13.9	13.1	14.2	5.0	8.2	8.9	4.6	
Minimum	30.3	13.9	7.1	12.7	11.7	13.7	4.6	7.8	8.1	4.1	
Maximum	33.2	15.9	8.2	14.5	13.7	15.0	5.6	8.5	9.7	5.2	
2 SE	± 0.33	± 0.26	± 0.13	± 0.19	± 0.20	± 0.18	± 0.10	± 0.08	± 0.19	± 0.12	
Females		16	16	19	16	13	15	10	15	16	16
N											
Mean	31.7	14.7	7.7	13.9	12.7	13.9	4.9	8.0	9.0	4.6	
Minimum	30.4	13.9	7.2	13.1	11.9	13.2	4.4	7.7	7.8	4.2	
Maximum	32.8	15.4	8.5	14.7	13.6	14.8	5.3	8.4	9.9	5.2	
2 SE	± 0.40	± 0.18	± 0.14	± 0.22	± 0.21	± 0.28	± 0.12	± 0.13	± 0.30	± 0.15	

all size, proportionately shallower cranium, and paler dorsal coloration.

Liomys spectabilis can be distinguished from *Liomys irroratus jaliscensis* from southeastern Jalisco by its generally longer but proportionately narrower cranium (greatest length of *irroratus* males, 33.4, females, 31.8; mastoid breadth, 14.9 and 14.4). Other characteristics distinguishing *spectabilis* from *irroratus* are those characters that also serve to distinguish *pictus* from *irroratus*—for example, differences in bacular morphology (Burt, 1960:44), six (*spectabilis* and *pictus*) rather than five plantar tubercles on the hind feet, and reddish brown dorsal coloration and a bright ochraceous lateral stripe (as compared to grayish brown coloration and a pale pinkish lateral stripe in *irroratus*).

Remarks.—*Liomys spectabilis* appears to be a member of the *Liomys pictus*-group as defined by Goldman (1911). *L. spectabilis* occupies a restricted distribution near the eastern limits of the geographic range of *L. pictus* in Jalisco. It seems plausible that the precursor of these two species occurred throughout this area of México, and that the parental stock was split into two parts in response to changing environmental conditions. One segment probably was restricted to coastal regions of western México and gave rise to *L. pictus*, whereas the other was isolated in interior Jalisco and gave rise to *L. spectabilis*. Subsequent to speciation, *L. pictus* has reinvaded inland areas of Jalisco and now occurs sympatrically with *spectabilis* at several localities.

The area northeast of Contla, Jalisco, in the vicinity of the type locality is under heavy agricultural use. All trapping in this area was conducted in the immediate vicinity of a highway which follows a shallow valley northeastward from Contla. The road right-of-way is about 40 to 50 feet wide at most points and has been allowed to grow to weeds, low brush, and trees; cornfields were present beyond the right-of-way in relatively level areas. Around the edges of these cornfields were rock or wire fences that were heavily overgrown with weeds and brush. On adjacent hillsides, where the slope became too steep to plant corn the grass was heavily grazed in most places and was interspersed with clumps of dense, low brush. It was along fencerows and in pastureland of the type described that P. L. Clifton obtained the original series of the new species between 17 and 27 September 1963. During that period Clifton obtained specimens of *Liomys spectabilis* and *Liomys pictus plantinarenis* in the same traplines at three localities as follows: 3.3 mi NE Contla (four *spectabilis* and two *plantinarenis*), 3 mi NE Contla (one *spectabilis*

and one *plantinarenensis*). 2.2 mi NE Contla (seven *spectabilis* and 11 *plantinarenensis*). Along with Larry C. Watkins and Elmer C. Birney, I revisited this same area on 7 August 1969 and obtained a specimen of *L. spectabilis* at a place 6 km NE Contla, at the edge of a dense clump of brush in a pasture. In early March 1964, P. L. Clifton trapped three additional specimens of *spectabilis* 8½ mi S Mazamitla. Traps in which these specimens were taken were set along a brush fence between a cornfield and a grove of oak. Nothing is known of the circumstances under which the specimens from near Tecalitlán and Pihuano were taken.

Only one of the six adult females of *spectabilis* evinced gross reproductive activity; a female taken on 26 September 1963 at a place 2.2 mi NE Contla carried five embryos that measured 4 mm in crown-rump length. Four adult males taken between 17 and 20 September 1963 had testes that averaged 21.5 (21-22) in length.

Specimens examined (21).—All localities are in Jalisco (those in italics are not plotted on Fig. 1 because undue crowding of symbols would have resulted): 8½ mi S Mazamitla, 5300 ft, 3 (KU 97182-84); 8 km N Contla, 4300 ft, 3 (KU 96035-37); 6 km NE Contla, 1310 m, 1 (KU 120606); 3.3 mi NE Contla, 3900 ft, 4 (KU 96042-45); 3 mi NE Contla, 3850 ft, 1 (KU 96039); 2.2 mi NE Contla, 3850 ft, 7 (KU 96049-54, 96064); 12 mi NE Pihuano, 3150 ft, 1 (Michigan State University, 11496); 8 mi SW Tecalitlán, 1 (California Academy of Science, 13961).

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